Biomag 2014

Halifax, Nova Scotia, Canada

August 24 – 28, 2014

Program

www.biomag2014.org

	Sunday Aug 24	Monday Aug 25		Tuesday Aug 26			Wednesday Aug 27			Thursday Aug 28		
8:00		REGISTRATION		REGISTRATION			REGISTRATION			REGISTRATION		
8:30		PANG, DUNKLEY & JETLY Symposium 1 Room 200D	QURAAN Symposium 2 Room 200C	GAETZ ISACM Symposium 3 Room 200D	KNAPPE, SANDER & PARKKONEN Symposium 5 Room 200C		GRAMFORT Symposium 12 Room 200D	HERNANDEZ-PAVON & SARASSO Symposium 13 Room 202	BAHRAMI-SHARIF & BAILLET Symposium 14 Room 200C	DAFFERTS-HOFER Symposium 18 Room 202	DELLA PENNA Symposium 19 Room 200C	ROSS & JOHNSON Symposium 20 Room 200D
9:00												
9:30												
10:00												
10:30		COFFEE BREAK		COFFEE BREAK			COFFEE BREAK			COFFEE BREAK		
11:00		Dr. R. Hari Keynote Lecture		Dr. E. Halgren Keynote Lecture			Dr. G. Barnes Keynote Lecture			Dr. O. Jensen Keynote Lecture		
11:30												
12:00		Lunch with Poster Session 1		Data Comp	Lunch with Poster Session 2		Lunch with Poster Session 4			Lunch Zimmerman prize award Bussiness Meeting		
12:30												
13:00												
13:30										COFFEE BREAK		
14:00	REGISTRATION	NAKASATO ISACM Symposium 1 Room 200D	JERBI & SINGH Symposium 3 Room 200C	WIEKHORST Symposium 6 Room 202	JOUSMAKI & DE TIEGE Symposium 7 Room 200D	LINA & CARRIER Symposium 8 Room 200C	Hot Topics and Zimmerman prize talk Room 200D	KIM Symposium 15 Room 200C		LITVAK & BUTZ Symposium 21 Room 200C	BAUMGARTEN Symposium 22 Room 202	SHIRASHI Symposium 23 Room 200D
14:30												
15:00												
15:30												
16:00		COFFEE BREAK		COFFEE BREAK			COFFEE BREAK			Closing Ceremony		
16:30		FUNKE ISACM Symposium 2 Room 200D	ROBINSON, WOOLRICH BARNES & BROOKES Symposium 4 Room 200C	BARDOUILLE Symposium 9 Room 200C	HERRING Symposium 10 Room 202	IOANNIDES Symposium 11 Room 200D	JONES Symposium 16 Room 200D	DOESBURG Symposium 17 Room 200C				
17:00												
17:30												
18:00	Dr. P. Morris Opening Keynote											
18:30		Industry Meets Science: Technology Showcase and "Happy Hour"		Poster Session 3 and "Happy Hour"								
19:00	Welcome Reception WTCC						Gala Dinner (business casual) Pier 21 Museum					
19:30												
20:00		Free Night		Student Night								
20:30												
21:00												
21:30												
22:00												
22:30												
23:00												

Halifax

The 19th International Conference on Biomagnetism

Table of Contents

Premier's Message

On behalf of the people of Nova Scotia, welcome to our province and to BioMag2014. This conference is an opportunity to expand partnerships and knowledge among international leaders in Biomagnetism, biotechnology, life sciences and medical imaging.

From breakthrough research, to screening and detection, to diagnosis and treatment -- your work is pivotal to improving health care and to saving lives. And the connections you make at BioMag2014 will lead to further revelations about the brain and body and to new routes to recovery from illness and disease.

Here in Nova Scotia, government, industry and academia are all focused on supporting innovative research and next-generation health care advances. I'd like to thank our biomedical community in Nova Scotia and the industry leaders who helped make BioMag2014 happen.

I'd also like to recognize the efforts of the clinicians, engineers, scientists and students who travelled here from all over the world to share their discoveries and expertise. From bench to bedside, your pioneering work is leading to advances in health care and medical technologies that are making a difference in the lives of Nova Scotians and in the lives of people around the world.

Sincerely,

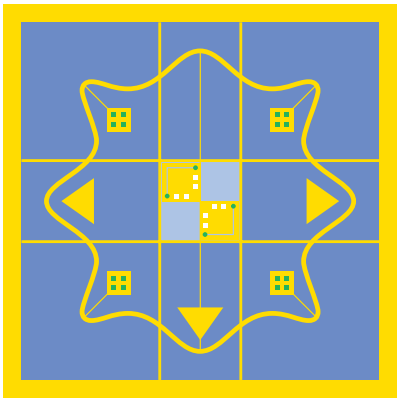
Stephen McNeil

Honourable Stephen McNeil, M.L.A.
Premier

The 19th International Conference on Biomagnetism, BioMag2014, welcomes you to Halifax, Canada.

As is traditional with BioMag meetings, the scientific programme includes technological, methodological and high-level fundamental research in MEG and other fields of biomagnetism. We have a number of specific aims for this conference's scientific program, which include highlighting the new and emerging techniques in biomagnetism, the latest approaches to the analyses of these complex signals and catalyzing the development of clinical applications.

Building on the multimodal emphasis of BioMag2012 in Paris, we are also highlighting the role of converging methods in the neurosciences involving the advancement of basic and applied studies in biomagnetism. These include the integration of MEG with MRI, fMRI, EEG and TMS studies. In particular, there are a number of presentations, and a satellite meeting, focussed on the ultra-low field MRI and the combination with MEG, as well as a symposium and posters on the imaging of magnetic nanoparticles.



We also focus on translational applications (such as those in neurology, ageing, psychiatry and brain injury). This is highlighted by the fact that we are cooperating with the International Society for the Advancement of Clinical Magnetoencephalography (ISACM) and have three symposia included in BioMag2014 where the presenters are speaking on MEG in clinical applications.

There will be the usual and time-honoured lively discussions in the symposia and poster sessions on the latest analysis techniques, from new pipelines, toolboxes through to computational and neural modelling approaches, methodological challenges and new connectivity and source analysis models.

This promises at be a superb meeting in beautiful Halifax, one of the oldest seaports in North America. We hope that you enjoy it fully and leave with new friends and collaborations to be renewed in 2016 in Seoul, Korea at the 20th BioMag conference.

The BioMag2014 organising committee

Margot Taylor **Steven Beyea**
Ryan D'Arcy **Gerhard Stroink**

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Harold Weinberg . . . . . Burnaby, Canada
Chris Wood . . . . . Santa Fe, USA

Organized by the Korean Society of Bioelectromagnestism, the 20th International Conference of Biomagnestism will take place in Seoul, Korea on October 1-6, 2016. For more information please contact biomag2016@biomag2016.org.

General Conference Information

Registration and Information Desk

The 19th International Conference on Biomagnetism Registration and Information Desk is located on the first level of the World Trade and Convention Centre, near the base of the escalators and outside the Poster/Exhibit area. We encourage you to use the resources of our registration team. We will do our best to ensure your experience at Biomag 2014 is smooth and memorable.

REGISTRATION AND INFORMATION DESK HOURS

Sunday, August 24 . . . . . 2:00 pm – 7:00 pm
Monday, August 25 . . . . . 7:00 am – 5:00 pm
Tuesday, August 26 . . . . . 8:00 am – 5:00 pm
Wednesday, August 27. . . . . 8:00 am – 5:00 pm
Thursday, August 28. . . . . 8:00 am – 5:00 pm

Conference Program Venues

All keynote lectures, symposia, posters and exhibits will be held at the World Trade and Convention Centre (WTCC) at 1800 Argyle Street in Halifax. Room locations are noted in this program. A floor plan of the WTCC is included on page 80 of this program for your reference. On Sunday evening, the Opening Keynote Session and Reception will be held in the Grand Ballroom on the second floor of the WTCC.

There will be one official conference event hosted outside of the WTCC. On Wednesday evening, the Gala Dinner will be held at the Canadian Museum of Immigration at Pier 21. Pier 21 is approximately a 20-minute walk from the WTCC along the Halifax waterfront or a short cab ride away. Shuttle service will be provided from the WTCC to Pier 21 to bring registered delegates to the Gala Dinner. The shuttle will begin at 6:45 pm and run until 7:30 pm.

Wi-Fi

The World Trade and Convention Centre has complimentary **Wi-Fi** for all conference delegates. To access, use the password: ***Bio14***.

Name Badges

Conference registrants must wear name badges to gain access to all conference activities. Should you misplace your name badge, please request your replacement at the Registration Desk.

Message Board

A message board will be set up near the Registration Desk. We encourage you to check the board daily for messages, job postings and program announcements.

Speaker Ready Room

The conference Speaker Ready Room is located in Room 201 and is equipped with both Mac and PC computers. Volunteers will be present in the Speaker Ready Room during the hours listed below to offer assistance.

Please submit your presentation to the volunteers in the Speaker Ready Room the **day before** you are presenting. Presentations will only be accepted on USB thumb drives. Presentations should be labeled by Symposia number (e.g. S1, S2, S3) and author.

SPEAKER READY ROOM HOURS:

Sunday, August 24 . . . . . 2:00 pm – 5:00 pm
Monday, August 25 . . . . . 8:00 am – 5:00 pm
Tuesday, August 26 . . . . . 8:00 am – 5:00 pm
Wednesday, August 27. . . . . 8:00 am – 5:00 pm
Thursday, August 28. . . . . 8:00 am – 12:00 pm

Tourism Information

Please check in at the Registration and Information Desk for information on where to eat, what to do and sites to see during your stay in Halifax. Whether you're looking to escape to the beach, take a stroll through the local parks, visit local artisans at the Seaport Farmers' Market or just get some shopping done while you're here, these are the people to ask!

Local Transportation (Bus, Ferry, Taxi)

Halifax is very pedestrian friendly, with pleasant downtown parks and green spaces. Halifax Metro Transit offers bus services around the city and also operates a ferry service between Halifax and Dartmouth. Metro Transit, including fares for the ferry service, are $2.50 for one way fare. Taxis are also readily available, with stands located outside of most hotels. There is also a direct line to taxis at the front entrance of the WTCC.

Keynote Speakers

Dr. Peter Morris

Dr. Peter Morris was trained in theoretical physics at Cambridge and in magnetic resonance at Nottingham. He helped to construct a whole body MRI system (now in the London Science Museum) and to establish the fundamental principles of MRI. He moved to the MRC's National Biomedical NMR Centre and then to Cambridge, where he studied cardiac calcium transients. Peter returned to Nottingham, becoming head of its MR centre in 1994. He lead a programme on ultra-high-field MRI, multimodal imaging (fMRI, EEG and MEG) and the use of MRS to understand the metabolic basis of neural activation - work recognized in the Sylvanus Thompson Medal of the BIR. He has served as Board Member of the MRC (twice), on the Physics Panel of NSERC (Canada) and currently serves on the Advisory Board of the MPI for Human Cognitive and Brain Sciences, and the Clinical Medicine Sub-panel for REF2014.

Dr. Riitta Hari

Dr. Riitta Hari, M.D. is the director of the multidisciplinary Brain Research Unit of the O.V. Lounasmaa Laboratory at Aalto University, Finland. She obtained her Doctor of Medicine degree in 1980 and her specialist of clinical neurophysiology qualification in 1981, both from the University of Helsinki, Finland. Riitta Hari has pioneered the use of magnetoencephalography (MEG) in providing insights into different aspects of brain function in both healthy subjects and patient groups. Her research interests include systems-level human neuroscience and brain imaging, with the focus on sensory systems and social interaction. Riitta Hari received the Advancement of European Science Award in 1987, the Louis-Jeantet Prize for Medicine in 2003 and the Finnish Science Award in 2009. She is a foreign member of the US National Academy of Sciences from 2004 and an Academician of Science, one among 12 in Finland, from 2010.

Dr. Eric Halgren

Dr. Eric Halgren is the co-director of the Multimodal Imaging Laboratory of the University of California, San Diego School of Medicine. He received his PhD in Neurosciences from UCLA in 1976, studying memory using single-unit recordings and electrical stimulation in the human medial temporal lobe. His research projects combine functional magnetic resonance imaging (fMRI), magnetoencephalography, and electroencephalography, within the context of structural MRI, for high-resolution spatiotemporal mapping of brain activity during cognition. He validates these measures using intracranial recordings from microelectrode arrays in patients with epilepsy. Dr. Halgren attempts to identify, locate, and characterize the neurocognitive stages used to encode and interpret events. Of particular interest are middle latency focal processes that encode faces and words, and later distributed processes that embody lexico-semantic integration.

Dr. Gareth Barnes

Dr. Gareth Barnes completed his PhD using magnetoencephalography (MEG) at Aston University in 1996. After brief post-docs in Juelich and Montreal, he returned to Aston to work from 2000-2009. In 2009, he moved to UCL where he is currently the head of MEG at the Wellcome Trust Centre for Cognitive Neuroimaging. His main interest is MEG source reconstruction with particular focus on the statistical and spatial properties of these images.

Dr. Ole Jensen

Dr. Ole Jensen received his MSc degree in electrical engineering at the Technical University of Denmark. He later completed his PhD in neuroscience at Brandeis University working on computational modeling of oscillatory networks. As a postdoctoral fellow he applied magnetoencephalography (MEG) to address questions on brain dynamics and human cognition at the Brain Research Unit, Low Temperature Laboratory. Helsinki University of Technology. In 2002 he moved to the Donders Institute for Brain, Cognition and Behavior. His research focuses on linking oscillatory brain activity to cognition: how does oscillatory brain activity shape the functional architecture of the working brain in the context of memory and attention.

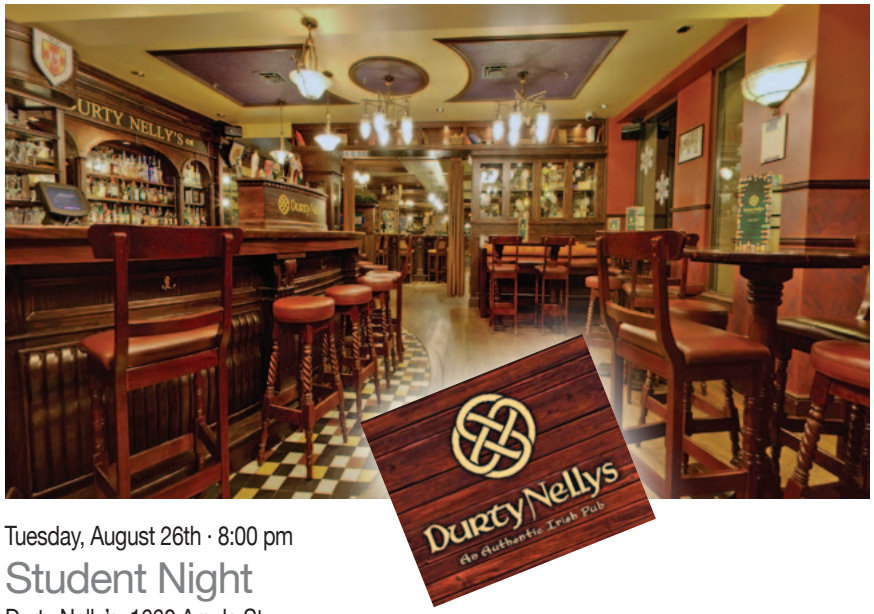
Social Program

Sunday, August 24th · 7:00 pm – 9:00 pm

Welcome Reception

Grand Ballroom, World Trade and Convention Centre

Please join us for the opening welcome reception following the opening keynote session. This will be a great chance to catch-up with old friends, make some new ones and get ready for the week ahead. Reception music provided by local fiddler, **Alycia Putnam**, will start our meeting with some Maritime flair and excitement.



Tuesday, August 26th · 8:00 pm

Student Night

Durty Nelly's, 1660 Argyle St

Stop by for drink and appetizer specials, meet colleagues and make some new friends. Just a block away from the World Trade and Convention Centre, *Durty Nelly's* is an authentic Irish Pub in downtown Halifax. What makes *Durty Nelly's* truly authentic is their attention to all the details that make a true Irish experience. From the art of pouring the perfect pint to designing a menu that brings traditional Irish favourites to the Maritimes, *Durty Nelly's* provides its customers with the original "Craic" of Ireland. For those in attendance, you will automatically be entered to win a $100 *Durty Nelly's* gift card.

Wednesday, August 27th · 7:00 pm - Midnight

Gala Dinner

Canadian Museum of Immigration at Pier 21, 1055 Marginal Road

Traditionally, many social calls in Nova Scotia culminate with guests gathering in the kitchen of the host's home for an experience of music, traditional maritime food and good company — so get ready for some down-home Maritime hospitality! The Gala Dinner will feature a succulent lobster dinner with wine, a cash bar and local entertainment that will be sure to keep your toes tapping and hands clapping all night! (For those hesitant to trying the lobster, a BBQ chicken and vegetarian option will be offered as an alternate choice.)

Before dinner starts we invite you to tour the **Museum at Pier 21** during the reception. For many Canadians who came seeking adventure, employment and greater opportunities for their children, Pier 21 was their introduction to a new country. Many newcomers were happy just to be off their ship after a long and harrowing crossing over the Atlantic Ocean. In the Rudolph P. Bratty Exhibition Hall, exhibits will be open to provide you with the opportunity to discover our nation's rich multicultural history. Tour Guides will be on hand to provide information and answer any questions you may have.

Space for the Gala Dinner is limited and open to registered Biomag delegates (and their guests) only. Tickets are included in your registration package if you have pre-registered and will be required at the door. If you would like to attend please check in at the Registration Desk before noon on Tuesday, August 26th to see if seats are still available to purchase. Tickets are $95 plus tax.

Biomag 2014 Awards

AWARDS DETAILS

The Biomag 2014 awards program supports and recognizes research excellence in the field of Biomagnestism. Prizes will be presented at the awards ceremonies at the Biomag 2014 Gala Dinner at Pier 21 on Wednesday, August 27th unless otherwise indicated.

MID-CAREER AWARD

The Mid-Career Award (MCA) recognizes the contribution of a scientist at the mid-career level who has made significant contributions to the field of biomagnetism research and to encourage such a scientist to help bring this field to a new level of advancement.
The winner will be awarded: $5,000 CAD.

YOUNG INVESTIGATOR AWARDS

Three Young Investigator Awards (YIA) will be given to post-doctoral fellows. There are three categories for the Young Investigator Awards: Theory & Modeling, Instrumentation, and Applications. There is one prize for each category. Each winner will be awarded: $500 CAD.

BEST PHD POSTER AWARDS

Three Best PhD Poster Awards (PPA) will be awarded to PhD students during Biomag 2014. Participation is limited to doctoral students and each participant must have submitted a poster as a first author and be present at Biomag 2014 during his or her poster session. Prizes will be awarded based on the originality of contribution, presentation skills, as well as thoroughness and scientific merit of data analysis; design and methodology; discussion and interpretation of findings; significance and anticipated impact of findings. The award amount for each PPA is $300 CAD.

JAMES ZIMMERMAN PRIZE

The James Zimmerman Prize (JZP) is an award celebrating the early pioneering work of James Zimmerman in the applications of SQUID technology. The International Advisory Board (IAB) and Biomag 2014 collaborated with the International Federation of Medical and Biological Engineering (IFMBE) for the JZP. The IFMBE has agreed to sponsor the award on a biannual basis during the Biomag conference.

The JZP has been awarded to **Dr. Myriam Pannetier-Lecoeur** (Saclay, France). As the winner, she will be awarded a JZP plaque and 1,000 €. She will be receiving the award during the Biomag 2014 business meeting on Thursday, August 28th. She will be describing her work ("MIXED SENSORS: SPIN ELECTRONICS-BASED MAGNETOMETERS FOR BIOMAGNETISM") during the HOT TOPIC session Wednesday afternoon, as well as at poster (P2-036). We thank the JZP committee (chair Dr. John Mosher) for their hard work.

DATA ANALYSIS COMPETITION

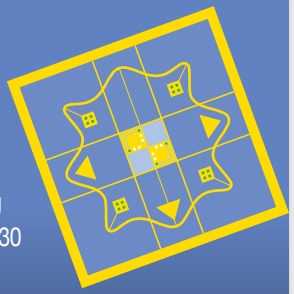
Two Data Analysis Competitions took place prior to the conference:

Challenge 1: **Biomag 2014 Decoding Challenge: Brain Decoding Across Subjects (DecMeg2014)**
ORGANIZERS: **Emanuele Olivetti**, **Seyed Mostafa Kia** and **Paolo Avesani** (NeuroInformatics Lab, Bruno Kessler Foundation and University of Trento, IT)
EMAIL: decmeg2014@list.fbk.eu

Challenge 2: **Causality Challenge**
ORGANIZERS: **Andreas Daffertshofer**, (MOVE Research Institute Amsterdam, Faculty of Human Movement Sciences, VU University Amsterdam, EMAIL: a.daffertshofer@vu.nl) and **Guido Nolte** (Dept. of Neurophysiology and Pathophysiology, UKE Hamburg, EMAIL: g.nolte@uke.de)

The challenge solutions will be reviewed on Tuesday, August 23rd at 12:30 pm in Room 202 for all those interested in attending. The Competition prizes will be awarded at the closing ceremony.

Industry Meets Science: Technology Showcase



We are excited to introduce our **Industry Meets Science: Technology Showcase** to this year's Biomag conference. Taking place on Monday, August 25th at 6:30 pm in Room 200C, the showcase will feature new and emerging technologies from our sponsors and exhibitors. Join us for happy hour and learn more about these exciting new technologies.

Satellite Meetings

All Satellite Meetings will take place at the Kenneth C. Rowe Management Building at Dalhousie University at 6100 University Ave in Halifax.

SATELLITE 1: SATURDAY, AUG 23, 8:30 AM– 5:00 PM

"Zero to Hero": An overview of MEG data acquisition, analysis and interpretation

CHAIRS: **Matthew Brookes** (Nottingham, UK), **Matti Hamalainen** (Charlestown, USA) and **T. Bardouille** (Halifax, Canada)

SATELLITE 2: SUNDAY, AUG 24, 10:30 AM-6:30 PM

Biomagnetic signal processing: Denoising, source localization and connectivity analysis

CHAIRS: **S Nagarajan** (San Francisco, USA) and **K Sekihara** (Tokyo, Japan)

SATELLITE 3: SUNDAY, AUG 24, 8:30 AM-12:30 PM

Open Source software for MEG analysis

CHAIR: **R Oostenveld** (Nijmegen, Netherlands)

SATELLITE 4: FRIDAY, AUG 29, 8:30 AM– 6:00 PM

Ultralow field magnetic resonance imaging

CHAIR: **J Clarke** (Berkeley, USA)

SATELLITE 5: FRIDAY, AUG 29, 8:00 AM– 6:00 PM

Brainstorm Community Workshop

CHAIR: **F Tadel** (Montreal, Canada)

For further details please visit the website at http://www.biomag2014.org/satellites.shtml

Keynote Sessions

SUNDAY, AUGUST 24TH, 6:00 PM

K1: Multimodal neuroimaging: Integration of MEG, fMRI and MRS approaches

Dr. Peter Morris
Sir Peter Mansfield Magnetic Resonance Centre,
University of Nottingham, Nottingham, UK
CHAIR: **Ryan D'Arcy**

MONDAY, AUGUST 25TH, 11:00 AM

K2: Brain imaging of social interaction—why and how?

Dr. Riitta Hari
Aalto University, Finland
CHAIR: **Gerhard Stroink**

TUESDAY, AUGUST 26TH, 11:00 AM

K3: What is the N400m?

Dr. Eric Halgren
Radiology, Neurosciences and Psychiatry,
University of California San Diego, USA
CHARIRS: **Margot Taylor** and **Chun Kee Chung**

WEDNESDAY, AUGUST 27TH, 11:00 AM

K4: More structure more function

Dr. Gareth Barnes
Wellcome Trust Centre for Neuroimaging,
University College London, London, UK
CHAIR: **Steven Beyea**

THURSDAY, AUGUST 28TH, 11:00 AM

K5: Linking mechanism to behavior: Neuronal oscillations provide a mechanism for prioritizing sensory processing

Dr. Ole Jensen
Donders Institute for Brain, Cognition and Behaviour,
Radbout University, Nijmegen, The Netherlands
CHAIRS: **Olivier Bertrand** and **Kiwoon Kim**

Monday Symposia

August 25th

8:30 am – 10:30 am Room 200D

Symposium 1

MEG as a diagnostic tool for post-traumatic stress disorders in military combatants

CHAIRS: Elizabeth Pang, Benjamin T Dunkley, R. Jetly

Modulation of synchronous neural interactions (SNI) with trauma as revealed by magnetoencephalography
Apostolos P. Georgopoulos

Developing MEG and DTI markers for PTSD
Mingxiong Huang

Connectivity strength in memory structures correlates with symptom-specific outcomes in PTSD veterans
Benjamin T. Dunkley

Post-traumatic stress disorder and its impact on set-shifting
Elizabeth W. Pang

Networks, noise and PTSD
Bratislav Mišić

8:30 am – 10:30 am Room 200C

Symposia 2

Network dysfunction in neurological and psychiatric disorders: What have we learned?

CHAIR: Maher Quraan

Biases in brain network analyses: Does the minimum spanning tree provide a solution?
Arjan Hillebrand

Epilepsy surgery outcome and functional network alterations in longitudinal MEG: A minimum spanning tree analysis
Edwin van Dellen

Oscillatory network plasticity in schizophrenia and stroke
Srikantan Nagarajan

Reduced network coherence in autism: Emerging perspectives across age and task
Sam Doesburg

Functional connectivity and graph theory in EEG and MEG and application to temporal epilepsy and depression
Maher Quraan

2:00 pm – 4:00 pm Room 200D

ISACM Symposium 1

Current standard of clinical care

CHAIR: Nobukazu Nakasato

Epilepsy theory and grounding
Stephan Rampp

Sensitivity and specificity of seizure-onset zone estimation by ictal MEG
Ritva Pateau

Clinical challenges in pediatric epilepsy: Role of MEG
Gretchen Von Allmen

Identifying the epileptogenic zone with MEG: Myths and realities
Richard Burgess

The coming of age of magnetoencephalography
Anto Bagic

2:00 pm – 4:00 pm Room 200C

Symposium 3

Getting a grip on MEG gamma-band oscillations: New insights from multimodal studies

CHAIRS: Karim Jerbi, Krish Singh

Is there a relationship between MEG gamma activity and the fMRI BOLD signal?
Johanna Zumer

MEG, MRS, drugs and dynamic causal modeling - studies of gamma oscillatory dynamics and their relationship to synaptic excitation/inhibition
Krish Singh

Are gamma oscillations related to resting GABA-A receptor density? Combining insights from MEG and Flumazenil-PET
Karim Jerbi

Comparing MEG, EEG and ECoG recordings of high-frequency activity
Lauri Parkkonen

Gamma Gamma Hey -- when and where does high-frequency MEG activity correspond with intracranial EEG findings?
Sarang Dalal

Monday Symposia
August 25th *continued*

4:30 pm – 6:30 pm Room 200D

ISACM Symposium 2
Emerging clinical indications
Chair: Michael Funke

The MAGIC-AD project: Towards an MEG biomarker in dementia
Fernando Maestú

Cortico-basal ganglia oscillatory connectivity and the pathophysiology of Parkinson's disease: insights from simultaneous MEG and deep brain recordings in Parkinsonian patients
Ashwini Oswal

From BabySQUID to BabyMEG: Recent advances in clinical pediatric magnetoencephalography
Christos Papadelis, B. Ahtam, C. Doshi, T. Nayak, M. Hamalainen, E. Grant, Y. Okada

MEG and mild traumatic brain injury/concussions
Rowland R. Lee, Mingxiong Huang

MEG and stroke recovery
Nina Forss

4:30 pm – 6:30 pm Room 200C

Symposium 4
Nonlinear and transient descriptions of brain activity
Chairs: Stephen Robinson, Mark Woolrich, Gareth Barnes, Matt Brookes

Neural information dynamics as seen by MEG
Michael Wibral

Dynamic centrality as a mechanism of cross-network coupling
Francesco de Pasquale

The disordered brain: Measuring neural network complexity in schizophrenia and neurodevelopment
Matthew Brookes

Fast transient networks in spontaneous brain activity
Adam Baker

Bereitschaftskomplexität: Going beyond the apparent
Surjo Soekadar

EEG source imaging of brain resting microstates
Anna Custo and Christoph M. Michel

Metastability and collective frequencies in oscillatory brain networks
Joana Cabral

A task-independent network revealed by symbolic mutual information
Stephen Robinson

Tuesday Symposia
August 26th *continued*

8:30 am – 10:30 am Room 200D

ISACM Symposium 3
Advances in multi-modal integration
Chair: William Gaetz

Multimodal imaging in the operating theater: The Houston experience
Jeremy Slater

Putting the "Bio" into biomarker
Tim Roberts

Integrating multiple imaging modalities of spontaneous brain activity
Steve Stufflebeam

Oscillations and brain structure in psychiatry
Chris Edgar

Resting-state and task-induced oscillatory biomarkers in health and disease: Their use, relationship to MR measures, and neurophysiologically informed modelling
Krish Singh

8:30 am – 10:30 am Room 200C

Symposium 5
Optically-pumped magnetometers for MEG
Chairs: Svenja Knappe, Lauri Parkkonen, Tilmann Sander

Chip-scale optically-pumped magnetometers for MEG
Svenja Knappe

What do we gain by measuring MEG right on the scalp?
Lauri Parkkonen

Retro-reflection brain atomic magnetometer system and source localization
Kiwoong Kim

Progress toward a multi-channel magnetoencephalography system using optically pumped atomic magnetometers
Peter Schwindt

Tuesday Symposia

August 26th *continued*

2:00 pm – 4:00 pm Room 202

Symposium 6

Magnetic nanoparticle imaging based on AC susceptibility and magnetorelaxometry measurements

Chair: Frank Wiekhorst

Characterization and localization of cancer using magnetic relaxometry
Edward R. Flynn

Quantitative imaging of magnetic nanoparticle distributions in animal-sized phantoms using magnetorelaxometry
Maik Liebl

Experimental results on magnetorelaxometry imaging of magnetic nanoparticles with m-sequence based inhomogeneous excitation fields
Daniel Baumgarten

How to adapt magnetorelaxometry activation setups for quantitative magnetic nanoparticle reconstructing under realistic noise conditions?
Annelies Coene

AC susceptibility imaging of magnetic nanoparticles
Solomon G. Diamond

Combining superparamagnetic relaxometry with ultra-low field MRI for early cancer detection
Per Magnelind

2:00 pm – 4:00 pm Room 200D

Symposium 7

The multiple facets of coherence analysis: From neurophysiology to clinical applications

Chairs: Xavier De Tiège, Veikko Jousmäki

Coherence analysis with magnetoencephalography: Methodological considerations
Joachim Gross

Exploring coupling between cortex and motor actions with corticokinematic coherence
Harri Piitulainen

Probing action observation with coherence analysis
Mathieu Bourguignon

Corticovocal coherence: a new tool to investigate speech neurophysiology
Marc Vander Ghinst

2:00 pm – 4:00 pm Room 200C

Symposium 8

SLEEPING in the MEG

Chairs: Jean-Marc Lina, Julie Carrier

Multiscale neural recordings of spindles in human cortex and subcortical structures
Sydney Cash

Alteration in spontaneous oscillatory activities during sleep associated with environmental adaptation and learning
Masako Tamaki

Grouping of MEG gamma oscillations by EEG sleep spindles and sleep slow oscillations
Matthias Molle

Sleep spindles reflect cognitive processing in neuropsychiatric disorders
Yuko Urakami

4:30 pm – 6:30 pm Room 200C

Symposium 9

The 'How' and 'Why' of real-time neuroimaging in MEG: Implementation and clinical applications

Chair: Tim Bardouille

The 'How' and 'Why' of real-time neuroimaging in MEG: Implementation and clinical applications
Tim Bardouille

Real-time MEG: Implementation and application
Lauri Parkkonen

Targeted reinforcement of neural oscillatory activity with real-time neuroimaging feedback
Sylvain Baillet

Real-Time neurofeedback during mental imagery: Implications for stroke recovery
Shaun Boe

Neurofeedback as treatment of chronic tinnitus: Approaches and perspectives
Thomas Hartmann

Tuesday Symposia
August 26th *continued*

4:30 pm – 6:30 pm Room 202

Symposium 10
Combining transcranial current stimulation with MEG: Problems, solutions, and perspectives
Chair: Jim Herring

Simultaneous in vivo assessment of large-scale cortical field activity during transcranial electric stimulation: perspectives and limitations
Surjo R. Soekadar, Matthias Witkowski, Niels Birbaumer, Stephen E. Robinson

Combining tDCS and MEG: The Cardiff experience
David J. McGonigle

Probing oscillatory activity in the visual system with tDCS/MEG and tACS/MEG
Jim D. Herring, Tom R. Marshall, Til O. Bergmann, Ole Jensen

Combining EEG and transcranial alternating current stimulation
Toralf Neuling, Randolph F. Helfrich, Stefan Rach, Johannes Vosskuhl, Till R. Schneider, Sina A. Trautmann-Lengsfeld, Andreas K. Engel, Christoph S. Herrmann

4:30 pm – 6:30 pm Room 200D

Symposium 11
States of consciousness in health and disease: New applications for MEG in research, in the clinic and at home
Chair: Andreas Ioannides

Brain activity in dissociative anaesthesia: MEG results from in healthy participants
David Liley

Electrophysiological slowing as a biomarker of localized cortical dysfunction
Jed A. Meltzer

EEG and MEG dynamics of sound and safe sleep
George K. Kostopoulos, Vasilios Kokkinos, Andreas M. Koupparis, Lichan Liu and Andreas A. Ioannides

MEG for personalized medicine: In the hospital and at home
Andreas A. Ioannides and Yuko Urakami

Wednesday Symposia
August 27th

8:30 am – 10:30 am Room 200D

Symposium 12
What is decoding and what can it bring to neuroscience?
Chair: Alexandre Gramfort

Definition, validation and examples of decoding with M/EEG
Alexandre Gramfort

Interpretation of weight vectors of decoding models
Stefan Haufe

Searching for biomarkers in Attention Deficit and Hyperactivity Disorder
Gustavo Sudre

Time-resolved decoding
Lauri Parkonnen

Decoding semantics from phrases and sentences using magnetoencephalography
Alona Fyshe

8:30 am – 10:30 am Room 202

Symposium 13
Novel developments in transcranial magnetic stimulation combined with electroencephalography
Chairs: Julio C. Hernandez-Pavon, Simone Sarasso

Methods for studying TMS-evoked EEG data
Julio C. Hernandez-Pavon

Assessing the electrophysiological correlates of cortical inhibitory mechanisms through combination of electroencephalography with transcranial magnetic stimulation
Faranak Farzan

EEG/MEG-rhythms of attentional selection targeted by frequency-tuned TMS to modify perception
Gregor Thut

Exploring human brain connectivity, excitability and plasticity with TMS-EEG
Mouhsin Shafi

Quantifying cortical EEG responses to TMS in (un)consciousness
Simone Sarasso

Wednesday Symposia

August 27th *continued*

8:30 am – 10:30 am Room 200C

Symposium 14

The functional role of cross frequency coupling

Chairs: Ali Bahramisharif, Sylvain Baillet

Dynamics of cross-frequency coupling in the resting & active states
Sylvain Baillet

Coupling between theta phase and gamma power in the hippocampal network
Laura Colgin

Measuring directionality between neuronal oscillations of different frequencies
Haiteng Jiang

Alpha and gamma-band oscillations during working memory: Networks, function and development
Frédéric Roux

2:00 pm – 4:00 pm Room 200D

Hot Topics Symposium

Chairs: Gerhard Stroink, Ryan D'Arcy

Mixed sensors: spin electronics-based magnetometers for biomagnetism
James Zimmerman Prize Winner
Myriam Pannetier-Lecoeur

Motor origin of temporal predictions in auditory perception
Benjamin Morillon, Sylvain Baillet, Valentin Wyart, Charles E. Schroeder

Phase-slope analysis reveals top-down directionality of fronto-temporal coherence in object-based attention
Daniel Baldauf, Robert Desimone

Using myelin density maps to inform M/EEG source reconstruction
Saskia Helbling, Sundeep Teki, Martina F. Callaghan, William Sedley, Siawoosh Mohammadi, Timothy D. Griffiths, Nikolaus Weiskopf, Gareth R. Barnes

MEG-derived neural oscillatory activity differentiates sentence processing from word list processing in theta, beta, and gamma frequency bands across time and space
Nietzsche Lam, Jan-Mathijs Schoffelen, Annika Hultén, Peter Hagoort

Retinal high-frequency oscillations drive corresponding rhythms in contralateral visual cortex
Sarang Dalal, Mathis Kaiser, Britta Westner, Tzvetan Popov

Can MEG distinguish subcomponents of the GABAergic signalling system?
David Nutt, Sue Wilson, Anne Lingford-Hughes, Ji Myers, Andreas Papadopoulos, Suresh Muthukumaraswamy

Brain connectivity measures: Application to epilepsy networks
Susan Bowyer, Basal Assad, Karen Mason, John Moran, Gregory Barkley, Norman Tepley, Andrew Zillgitt

Novel methods for improving source localization using hybrid ultra-low-field MRI and MEG
Koos C.J. Zevenhoven, Antti Mäkinen, Aino Tervo, Juhani Dabek, Risto J. Ilmoniemi

Hyperscanning MEG for understanding mother–child cerebral interactions
Masayuki Hirata, Takashi Ikeda, Minoru Asada, Mitsuru Kikuchi, Hirotoshi Hiraisi. Yuko Yoshimura, Tomoya Kimura

2:00 pm – 4:00 pm Room 200C

Symposium 15

Future perspectives on magnetocardiography

Chair: Kiwoong Kim

Diagnostic opportunities of the MCG: Cardiac currents, extracorporal magnetic field and new sensor concepts
Hans Koch, Uwe Steinhoff

Assessing sensitivity and resolution of MCG and ECG
Matti Stenroos

Voltage-biased SQUID magnetometer based 36 channel magnetocardiograph system
Xiangyan Kong

Realizing the promise of fetal magnetocardiography
Ronald Wakai

Heart magnetic resonance
Kiwoong Kim

4:30 pm – 6:30 pm Room 200D

Symposium 16

From neurons to behavior: Advances in computational neural modeling to interpret MEG/EEG signals

Chair: Stephanie Jones

Interactions between core and matrix thalamocortical projections in human sleep spindle synchronization
Giri Krishnan, Tanya Baker, Maxim Bazhenov, Syd Cash, Eric Halgren, Terry Sejnowski

A model for phase coding in the visual system coordinated by gamma activity phase-locked to alpha oscillations
Bart Gips, Jan van der Eerden, Ole Jensen

Biophysically principled models of MEG/EEG current source signals reveals novel mechanisms of neural rhythms and their impact on function
Stephanie Jones, Christopher Moore, Ellen Grant, Yoshio Okada, Matti Hamalainen

Dynamic causal modeling: A mathematical microscope for the observation of neural system transmitters
Rosalyn J. Moran

The virtual brain: Delivery practical results for novel clinical applications
Petra Ritter, Victor Jirsa, Randy McIntosh

Wednesday Symposia

August 27th *continued*

4:30 pm – 6:30 pm Room 200C

Symposium 17

Brain oscillations and network connectivity in typical and atypical neurocognitive development

Chair: Sam Doesburg

Gamma phase synchrony in autism spectrum disorders - a biomarker for therapies
Timothy Roberts

Functional connectivity and entropy in development
Emma Hall

Disrupted brain connectivity in atypical development: insights from resting-state magnetoencephalography
Annette X. Ye

Age related changes of MEG alpha and gamma-band activity reflect the late maturation of distractor-inhibition during working memory maintenance
Frédéric Roux

Using MEG to investigate cortical biomarkers in children and adolescents with autism spectrum disorder
Tal Kenet

Thursday Symposia

August 28th

8:30 am – 10:30 am Room 202

Symposium 18

Cross-frequency coupling - methodological challenges

Chair: Andreas Daffertshofer

Cross-frequency coupling as a measure of brain interactions
Guido Nolte

Cross frequency correlations - when do they indicate coupling?
Michael Wibral

Bi-phase locking – a tool for probing non-linear information transfer in the brain
Felix Darvas

A computational model of cross-frequency coupling in rhythmic motor control
Tjeerd Boonstra

Estimating directional cross-frequency coupling from time-frequency spectra using dynamic causal modeling
Bernadette van Wijk

8:30 am – 10:30 am Room 200C

Symposium 19

Mechanisms of integration/segregation in the resting brain

Chair: Stefania Della Penna

Dwelling in the rich club: Connectomic determinants of brain dynamics
Michael Breakspear

Rapid resting-state-network dynamics
Juliane Britz

Measuring the temporal, spatial and spectral dynamics of functional connectivity
Matthew Brookes

Dynamics of cross-frequency coupling in the resting & active states
Sylvain Baillet

Architecture of MEG functional interactions at rest
Stefania Della Penna

8:30 am – 10:30 am Room 200D

Symposium 20

Evoked and induced oscillation in the auditory, visual and sensorimotor systems - mechanisms and applications

Chairs: Bernhard Ross, Blake Johnson

GABA and the auditory steady-state response
Donald C. Rojas, Debra Singel, Mark S. Brown

Gamma oscillations in a thalamocortical binding network explain deficits in speech-in-noise understanding in aging
Bernhard Ross

Entrained thalamo-cortical networks in fear conditioning
Chrysa Lithari, Stephan Moratti, Nathan Weisz

Modulation encoding in auditory cortex
Jonathan Z. Simon

Continuous speech entrains cortical brain oscillations
Joachim Gross

Sensorimotor oscillations related to predictive timing in musical rhythm processing in children and adults
Takako Fujioka, Laurel Trainor

Development of auditory and sensorimotor brain rhythms studied with a custom-sized pediatric MEG system
Blake W. Johnson, Huizhen Tang, Paul Sowman, Stephen Crain, Douglas Cheyne

Thursday Symposia

August 28th *continued*

2:00 pm – 4:00 pm Room 200C

Symposium 21

What disease teaches us about oscillations and vice versa

Chairs: Markus Butz, Vladimir Litvak

Oscillatory brain networks in movement disorders: An insight from combined MEG and intracranial recordings
Vladimir Litvak

Motor cortex oscillations and stroke recovery
Nina Forss

Oscillations and functional brain networks in multiple sclerosis
Prejaas Tewarie

The slowed brain: Cortical oscillatory activity in hepatic encephalopathy
Markus Butz

2:00 pm – 4:00 pm Room 202

Symposium 22

Real-time signal processing and source localization from MEG measurements

Chair: Daniel Baumgarten

MEG neurofeedback based on attention modulation of posterior alpha activity
Jörn M. Horschig

rtMEG: A real-time software for relaying MEG signals
Gustavo Sudre

Efforts for improving real-time controllability of motor imagery brain computer interface – EEG and simultaneous MEG/EEG
Sung Chan Jun

A toolbox for real-time neuroelectromagnetic source imaging
Christof Pieloth

MEG/EEG real-time analysis and real-time source localization
Christoph Dinh

2:00 pm – 4:00 pm Room 200D

Symposium 23

Impact investigation of MEG as direct diagnostic methods

Chair: Hideaki Shiraishi

Angelman syndrome
Kiyoshi Egawa

Focal cortical dysplasia
Midori Nakajima

Atypical benign partial epilepsy in childhood (ABPE)
Hideaki Shiraishi

Schizophrenia and autism spectrum disorder
Kazuyori Yagyu

Poster Session 1:

Monday August 25th,
12:00 pm – 2:00 pm

Analysis Toolboxes

P1-001
A DISCONTINUOUS GALERKIN FINITE ELEMENT APPROACH FOR THE EEG FORWARD PROBLEM
ENGWER, Christian, LUDEWIG, Jakob, VORWERK, Johannes, WAGNER, Sven, WOLTERS, Carsten

P1-002
MNE FOR MEG AND EEG DATA PROCESSING: WHAT'S UP?
GRAMFORT, Alexandre, LUESSI, Martin, LARSON, Eric, ENGEMANN, Denis, STROHMEIER, Daniel, BRODBECK, Christian, GOJ, Roman, JAS, Mainak, BROOKS, Teon, PARKKONEN, Lauri, HAMALAINEN, Matti

P1-003
A TOOLBOX FOR REAL-TIME NEUROELECTROMAGNETIC SOURCE LOCALIZATION
PIELOTH, Christof, KNÖSCHE, Thomas, MAESS, Burkhard, FUCHS, Mirco

P1-004
MEGA_STATS: A STATISTICAL TOOLBOX FOR MEG, EEG & INTRACEREBRAL EEG DATA ANALYSIS
YAHIA CHERIF, Lydia, SCHWARTZ, Denis

P1-005
ANYWAVE: A SOFTWARE FOR VISUALIZING AND PROCESSING ELECTROPHYSIOLOGICAL SIGNALS
COLOMBET, Bruno, BÉNAR, Christian-George, BADIER, Jean-Michel

P1-006
WEBMEG: AN INTERACTIVE WEB-BASED TOOL FOR THE VISUALIZATION AND ANALYSIS OF MEG AND EEG DATA
DOSHI, Chiran, HAEHN, Daniel, RANNOU, Nicolas, GRANT, Ellen, OKADA, Yoshio, PIENAAR, Rudolph, PAPADELIS, Christos

P1-007
[MEG]PLS: A PIPELINE FOR MEG DATA ANALYSIS AND PLS STATISTICS.
CHEUNG, Michael, KOVACEVIC, Natasa, FATIMA, Zainab, MISIC, Bratislav, MCINTOSH, Randy

P1-008
OPEN-SOURCE MEG/EEG ACQUISITION SOFTWARE
SUN, Limin, DINH, Christoph Dinh, OKADA, Yoshio, HAMALAINEN, Matti

P1-009
SIMULTANEOUS MATCHING PURSUIT DECOMPOSITION OF EVOKED BRAIN RESPONSES IN M/EEG USING SPATIO-TEMPORAL DICTIONARIES
KORDOWSKI, Paweł, MATYSIAK, Artur, KÖNIG, Reinhard, SIELUŻYCKI, Cezary

Artifact Detection and Correction

P1-010
REAL TIME OCULAR AND CARDIAC ARTIFACT REDUCTION IN MEG
BREUER, Lukas, DAMMERS, Jürgen, ROBERTS, Timothy P.L., SHAH, N. Jon

P1-011
VISUAL GAMMA OSCILLATIONS RECORDED WITH MEG ARE NOT AFFECTED BY THE MICROSACCADIC SPIKE ARTEFACT.
WIECZOREK, Kacper, MUTHUKUMARASWAMY, Suresh D., SUMNER, Petroc, SINGH, Krish D.

P1-012
APPLICATION OF REAL-TIME ROBUST SIGNAL SPACE SEPARATION TO BABYMEG SYSTEM
LEW, Seok, HÄMÄLÄINEN, Matti, OKADA, Yoshio, LI, Xin

P1-013
AN AUTOMATIC ALGORITHM FOR FINDING AND CLEANING CONTAMINATED MEG AND EEG CHANNELS
MUTANEN, Tuomas P., METSOMAA, Johanna, KUKKONEN, Matleena, KEITAANNIEMI, Mariia, ILMONIEMI, Risto J.

P1-014
SSS-BASED MOVEMENT COMPENSATION AND VIRTUAL HEAD-POSITION RELOCATION IMPROVE SENSOR-LEVEL ICA
TAYLOR, Jason, HENSON, Richard

P1-015
REMOVING POWER LINE ARTIFACT WITH NO EXTERNAL CUE
HARPAZ, Yuval, GOLDSTEIN, Abraham

P1-016
RISING ABOVE THE NOISE: THE CHALLENGE OF COMBINING TDCS & MEG
HANLEY, Claire, SINGH, Krish, MCGONIGLE, David

P1-017
REMOVAL OF LARGE INTERFERENCES IN MEG SOURCE IMAGING BY POOR MAN'S TSSS
SEKIHARA, Kensuke, NAGARAJAN, Srikantan

P1-018
REGULARIZED HEAD POSITION TRANSFORMATION FOR MEG
HELLE, Liisa, NENONEN, Jukka, TAULU, Samu

P1-019
BEAMFORMER ANALYSIS IS AUGMENTED WITH INDEPENDENT COMPONENT ANALYSIS SOURCE SUBSPACE REGULARIZATION
CASSEL, Daniel B., LALANCETTE, Marc, URBAIN, Charline M., FATIMA, Zainab, QURAAN, Maher A.

Auditory Processing

P1-020
COMPARISON OF EEG AND MEG COHERENCE FUNCTIONS BETWEEN A BRAIN SIGNAL AND A SOUND ENVELOPE IN A SELECTIVE LISTENING STUDY
HIGUCHI, Masanori, SUZUKA, Yuko, OYAMA, Daisuke, UEHARA, Gen

P1-021
MEASUREMENTS OF AUDITORY EVOKED EEG AND MEG BY BONE-CONDUCTED ULTRASOUND IN THE PROFOUNDLY HEARING-IMPAIRED
NAKAGAWA, Seiji

P1-022
LEFT AUDITORY SUSTAINED FIELDS REPRESENTING INDIVIDUAL TIME PERCEPTION
YOKOSAWA, Koichi, HAN, Ruokang, KADOYA, Tomoka, MIYAZAKI, Akane, TAKAHASHI, Taiki

P1-023
AUDIOVISUAL SPATIAL INTEGRATION DURING LONG-TERM ADAPTATION TO LEFT-RIGHT REVERSED AUDITION
AOYAMA, Atsushi, SHIGETA, Kazuhiro, KURIKI, Shinya

P1-024
CHANGES IN AUTOMATICITY OF JAPANESE PHONETIC CONTRAST USING THE MISMATCH FIELD COMPONENT
HISAGI, Miwako, PANTAZIS, Dimitrios, MIYAGAWA, Shigeru, SHAFER, Valerie, KOTEK, Hadas, SUGAWARA, Ayaka

P1-025
OSCILLATORY CORRELATES OF SENSORY ATTENUATION
CAO, Liyu, THUT, Gregor, GROSS, Joachim

P1-026
AUDITORY NEURAL ACTIVITIES ELICITED BY BINAURAL STIMULI
KURUMAYA, Haruka

P1-027
NEURAL DYNAMICS OF SENSORY-MOTOR SYNCHRONIZATION
TAL, Idan, ABELES, Moshe

P1-028
REAL-TIME SINGLE-TRIAL SOURCE LOCALIZATION USING RAP-MUSIC AND REGION OF INTEREST CLUSTERING
DINH, Christoph, STROHMEIER, Daniel, ESCH, Lorenz, GÜLLMAR, Daniel, BAUMGARTEN, Daniel, HÄMÄLÄINEN, Matti S., HAUEISEN, Jens

P1-029
TIME PRECISION OF CORTICO-CORTICAL INTERACTIONS IN MUSICAL METER FOLLOWING TASK
ABELES, Moshe, TAL, Idan

P1-030
MEG TEST-RETEST RELIABILITY OF SENSORY OSCILLATIONS
TAN, Heng-Ru May, GROSS, Joachim, UHLHAAS, Peter J.

P1-031
MEG ANALYSIS OF AUDITORY OBJECT PERCEPTION
SHAPIRA LOTS, Inbal, ABELES, Moshe

Auditory Processing

continued

P1-032
MODULATION OF AUDITORY EVOKED RESPONSES BY EMOTIONAL IMAGES
TANAKA, Keita

P1-033
WAVE PACKET ANALYSIS: A NOVEL METHOD FOR TRACKING STIMULUS INDUCED WAVES IN ELECTROPHYSIOLOGICAL DATA
PRICE, Darren, BROOKES, Matthew, LIDDLE, Elizabeth, LIDDLE, Peter, PALANIYAPPAN, Lena

P1-034
BIMUSICAL BRAINS REVEALED BY MAGNETOENCEPHALOGRAPHY STUDIES
MATSUNAGA, Rie, TAKESHITA, Yuya, SUGINO, Yuta, YOKOSAWA, Koichi, ABE, Jun-ichi

P1-035
ASSRS IN MEG TO MUSICAL CHORDS MODULATED IN AMPLITUDE
SEKI, Shogo, NEMOTO, Iku

P1-036
CONNECTIVITY BETWEEN THE HESCHL'S GYRUS AND THE INFERIOR FRONTAL GYRUS MEDIATE THE PROCESSING OF MUSICAL FEATURES IN MOZART VARIATION KV265: A MAGNETOENCEPHALOGRAPHY STUDY
KIM, Chan Hee, KIM, June Sic, CHUNG, Chun Kee

P1-037
IMPAIRED PRE-ATTENTIVE AUDITORY PROCESSING IN FIBROMYALGIA: A MISMATCH NEGATIVITY STUDY
CHOI, Woojin, LIM, Manyoel, KIM, June Sic, KIM, Dajung, CHUNG, Chun Kee

P1-038
INVESTIGATION OF THE AUDITORY M100 BRAIN RESPONSE FOR LOW FREQUENCY SOUND STIMULATION
BAUER, Martin, ROBERT, Kühler, HENSEL, Johannes, KLING, Christoph, TRAHMS, Lutz, KOCH, Christian, SANDER, Tilmann

P1-039
AUDITORY ENVELOPE FOLLOWING RESPONSES IN THE MATURE AND DEVELOPING BRAIN
TANG, Huizhen, BROCK, Jon, CRAIN, Stephen, JOHNSON, Blake

P1-040
MELODIES IN THE BRAIN
GLOBERSON, Eitan, TAL, Idan, GRANOT, Roni, HARPAZ, Yuval, GOLDSTEIN, Abraham

P1-041
HUMAN CORTICAL RESPONSES TO SLOW AND FAST BINAURAL BEATS REVEAL MULTIPLE MECHANISMS OF BINAURAL HEARING
ROSS, Bernhard, MIYAZAKI, Takahiro, THOMPSON, Jessica, JAMALI, Shahab, FUJIOKA, Takako

P1-042
ALPHA SUPPRESSION IN CI PATIENTS WITH SSD REFLECT POST-IMPLANTATION INCREASE IN HEALTHY EAR COMPREHENSION OF DEGRADED SPEECH
WONG, Daniel, OBLESER, Jonas, LAI, Waikong, PETER, Nicole, DILLIER, Norbert, PROBST, Rudolf, KLEINJUNG, Tobias, DALAL, Sarang

P1-043
CORTICAL DYNAMICS ELICITED BY ILLUSORY AND NON-ILLUSORY AUDITORY STIMULI
PADULO, Caterina, BRANCUCCI, Alfredo, FRANCIOTTI, Raffaella, TOMMASI, Luca, DELLA PENNA, Stefania

P1-044
ABNORMAL BRAIN SYNCHRONY IN CHILDREN WITH DOWN SYNDROME
LIU, Careesa C., GHOSH HAJRA, Sujoy, ROBERTS, Larry E., BOSNYAK, Daniel J., D'ARCY, Ryan C.N., CHEUNG, Teresa

Biosusceptometry & Nanoparticles

P1-046
HOW TO ADAPT MAGNETORELAXOMETRY ACTIVATION SETUPS FOR QUANTITATIVE MAGNETIC NANOPARTICLE IMAGING UNDER REALISTIC NOISE CONDITIONS
COENE, Annelies, LIEBL, Maik, WIEKHORST, Frank, CREVECOEUR, Guillaume, STEINHOFF, Uwe, DUPRÉ, Luc, HAUEISEN, Jens

P1-047
MAGNETIC PARTICLE SPECTROSCOPY TO QUANTIFY THE MAGNETIC NANOPARTICLE DISTRIBUTION IN BIOLOGICAL TISSUE
WIEKHORST, Frank, FARR, Tracy, HARMS, Christoph, TRAHMS, Lutz

P1-048
DIPOLAR INTERACTIONS BETWEEN MAGNETIC NANOPARTICLES IN MAGNETORELAXOMETRY
LELIAERT, Jonathan, COENE, Annelies, CREVECOEUR, Guillaume, DUPRÉ, Luc, VAN WAEYENBERGE, Bartel

P1-049
DEVELOPMENT OF A RABBIT SIZED PHANTOM FOR VALIDATION OF QUANTITATIVE IMAGING OF MAGNETIC NANOPARTICLE DISTRIBUTIONS
LIEBL, Maik, STEINHOFF, Uwe, WIEKHORST, Frank, BAUMGARTEN, Daniel, GUTKELCH, Dirk, TRAHMS, Lutz, HAUEISEN, Jens

P1-050
NUMERICAL ANALYSIS OF THE INFLUENCE OF MAGNETIC PROPERTIES ON THE THERMAL DISTRIBUTION DURING MAGNETIC NANOPARTICLE HYPERTHERMIA
SOETAERT, Frederik, CREVECOEUR, Guillaume, DUPRÉ, Luc

P1-051
MAGNETIC CHARACTERIZATION OF NANOPARTICLES FOR SUSCEPTIBILITY BASED IMAGING
NADAR, Priyanka, FICKO, Bradley, DIAMOND, Solomon

P1-052
DEVELOPMENT OF HIGH SENSITIVE AC BIOSUSCEPTOMETER FOR MAGNETIC NANOPARTICLE IMAGING
PAIXAO, Fabiano C., BAFFA, Oswaldo, MIRANDA, Jose Ricardo A.

P1-053
TWO-DIMENSIONAL NMR SPECTROSCOPY OF 13C METHANOL AT 5 μT
SHIM, Jeong Hyun, LEE, Seong-Joo, HWANG, Seongmin, YU, Kwon-Kyu, KIM, Kiwoong

Clinical/Translational Studies

P1-054
ABNORMAL NEURAL ACTIVATIONS DURING A MENTAL FLEXIBILITY TASK IN SOLDIERS WITH POST-TRAUMATIC STRESS DISORDERS (PTSD)
PANG, Elizabeth W., SEDGE, Paul, GRODECKI, Richard, MACDONALD, Matt J., ROBERTSON, Amanda, JETLY, Rakesh, SHEK, Pang N., TAYLOR, Margot J.

P1-055
OPTIMIZING FMRI AND MEG FOR PRESURGICAL MAPPING
STEVENS, Tynan, CLARKE, David, STROINK, Gerhard, BARDOUILLE, Tim, D'ARCY, Ryan, BEYEA, Steven

P1-056
LONG-TERM CYCLIC MENSTRUAL PAIN CHANGES EMOTIONAL PROSODY PROCESSING IN PRIMARY DYSMENORRHEA FEMALES
LOW, Intan, LIU, Yu-Hsiang, TU, Cheng-Hao, CHAO, Hsiang-Tai, HSIEH, Jen-Chuen, CHEN, Li-Fen

P1-057
INCREASED ALPHA-BAND PHASE SYNCHRONISATION IN PTSD DURING WORKING MEMORY AND DELAYED RECOGNITION
DUNKLEY, Benjamin, DOESBURG, Sam, SEDGE, Paul, GRODECKI, Richard, JETLY, Rakesh, SHEK, Pang, PANG, Elizabeth, TAYLOR, Margot

P1-058
LANGUAGE LATERALIZATION IN PRE-SURGICAL MAPPING USING VOLUME-BASED MNE APPLIED TO MEG DATA
LAING, Erika, NIRANJAN, Ajay, RICHARDSON, R Mark

Clinical/Translational Studies

continued

P1-059
HIGH FREQUENCY OSCILLATORY STATE IN SOMATOSENSORY EVOKED MAGNETIC RESPONSES MAY PREDICT RESIDUAL BRAIN FUNCTION IN PATIENTS WITH MINIMALLY CONSCIOUS STATE
KANNO, Akitake, NAKASATO, Nobukazu, KAKISAKA, Yosuke, NAGAMINE, Yoshihide, KAWASHIMA, Ryuta

P1-060
MRC PARTNERSHIP GRANT: BUILDING CAPACITY IN UK CLINICAL MEG RESEARCH
ROUTLEY, Bethany, HALL, Michael, BERESFORD, Rebecca, PRINSLOO, Kevin, HUNT, Benjamin, HEIDEMAN, Simone, MEYER, Sofie, PAPANIKOLAOU, Ioannis, HAMANDI, Khalid, FURLONG, Paul, HOLLIDAY, Ian, KESSLER, Klaus, HENSON, Richard, SHYTROV, Yury, GROSS, Joachim, UHLHAAS, Peter, MORRIS, Peter, BROOKES, Matthew, NOBRE, Kia, WOOLRICH, Mark, BARNES, Gareth, LITVAK, Vladimir, GREEN, Gary, SINGH, Krish

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IOANNIDES, Andreas, POGHOSYAN, Vahe, LIU, Lichan

P1-063
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DICOM COMPLIANT MEG LOCALIZATION INFORMATION INTEGRATION IN MRI STUDIES FOR ACCURATE IMPLANTABLE DEVICE SURGICAL PLANNING AND NAVIGATION
DURAND, Pierre, AUBOIROUX, Vincent, PIETRAS, Johan, BERGER, François, LABYT, Etienne

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P1-079
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HE, Wei, BROCK, Jon, JOHNSON, Blake

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COFFMAN, Brian, ROMERO, Lucinda, KODITUWAKKU, Elizabeth, KODITUWAKKU, Piyadasa, STEPHEN, Julia

P1-081
INTRINSIC ALPHA-BAND FUNCTIONAL CONNECTIVITY IN THE ATTENTIONAL DORSAL VISUAL NETWORK IN CHILDREN
REWIN CIESIELSKI, Kristina, BOUCHARD, Chris, SOLIS, Isabel, STEPHEN, Julia, AHLFORS, Seppo, HÄMÄLÄINEN, Matti, SEAMAN, Brandi, MEYER, Samuel, KHAN, Sheraz

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P1-084
PERFORMANCE EVALUATION OF A NOVEL PEDIATRIC MEG SYSTEM
LUESSI, Martin, NUMMENMAA, Aapo, LEW, Seok, OKADA, Yoshio, HÄMÄLÄINEN, Matti

P1-085
MU RHYTHM SUPPRESSION IN TERM AND PRETERM INFANTS
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WIANDA, Elvis, CAPLAN, Jeremy, ROSS, Bernhard

P1-087
FUNCTIONAL SIGNIFICANCE OF BETA- AND GAMMA-BAND NEUROMAGNETIC OSCILLATION AND PLASTIC REORGANIZATION AFTER MUSIC TRAINING IN AGING
FUJIOKA, Takako, JAMALI, Shahab, ROSS, Bernhard

P1-088
BRIDGING THE GAP IN THE NEUROIMAGING OF EARLY MOTOR DEVELOPMENT: EVIDENCE FROM MEG STUDIES IN PRESCHOOL AGE CHILDREN
CHEYNE, Douglas, JOBST, Cecilia, TESAN, Graciela, CRAIN, Stephen, JOHNSON, Blake

Machine Learning, Decoding & BCI

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P1-090
NEUROFEEDBACK FOR HAND THERAPY AFTER PARALYSIS USING REAL-TIME MAGNETO-ENCEPHALOGRAPHY
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LEE, Hyeongrae, KIM, June Sic, CHUNG, Chun Kee

P1-092
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P1-093
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STORY, Ross, BARDOUILLE, Timothy, BOE, Shaun

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HIGH-PERFORMANCE BRAIN MACHINE INTERFACE COMBINING IMAGE INFORMATION
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OLIVETTI, Emanuele, KIA, Seyed Mostafa, AVESANI, Paolo

P1-096
INFORMATIVE TIMING DETECTION IN A TRIAL-BY-TRIAL MEG DECODING FRAMEWORK
PELED, Noam

P1-097
DECODING MOTOR INTENTIONS USING PHASE, AMPLITUDE AND PHASE-AMPLITUDE COUPLING
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P1-098
AUTOMATED MODEL SELECTION FOR SPATIAL WHITENING AND COVARIANCE ESTIMATION OF M/EEG SIGNALS
ENGEMANN, Denis A., GRAMFORT, Alexandre

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12:00pm – 2:00 pm

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MOTOR ORIGIN OF TEMPORAL PREDICTIONS IN AUDITORY PERCEPTION
MORILLON, Benjamin, WYART, Valentin, SCHROEDER, Charles E., BAILLET, Sylvain

P2-002
NEUROMAGNETIC AUDITORY STEADY STATE RESPONSE TO TRIADS: MODULATION AS A FUNCTION OF FREQUENCY RATIO
OTSUKA, Asuka, YUMOTO, Masato, KURIKI, Shinya, NAKAGAWA, Seiji

P2-003
THE EFFECTS OF PREDICTION AND ATTENTION ON GAMMA AND ALPHA OSCILLATIONS IN VISUAL CORTEX
BROWN, Harriet

P2-004
INHIBITING IN THE FACE OF A SMILE OR A FROWN
ROBERTSON, Amanda, PANG, Elizabeth, TAYLOR, Margot

P2-005
AN MEG STUDY OF THE COCKTAIL-PARTY EFFECT USING THE COHERENCE FUNCTION BETWEEN A BRAIN SIGNAL AND A SOUND ENVELOPE
SUZUKA, Yuko, HIGUCHI, Masanori, OYAMA, Daisuke, UEHARA, Gen

P2-006
GENERATION OF THE MISMATCH NEGATIVITY REQUIRES PERCEPTUAL AWARENESS OF THE STANDARD STREAM
DYKSTRA, Andrew, GUTSCHALK, Alexander

P2-007
THE INDIVIDUAL ALPHA FREQUENCY DECREASES BY DOPAMINE IN PATIENTS WITH PARKINSON'S DISEASE.
VAN DIJK, Hanneke, VAN TOOREN-HOOGENBOOM, Nienke, FERREA, Stefano, SUDMEYER, Martin, SCHNITZLER, Alfons

P2-008
A STUDY OF THE RELAXING EFFECT BY ANALYZING THE CONTINGENT MAGNETIC VARIATIONS IN MEG VIA THE STIMULUS OF AFFECTIVE PICTURES
HORNG, H. E., LIAO, S.H., CHIEH, J.J., HUANG, Y.T., YANG, H.C.

P2-009
EXPOSURE DURATION DIFFERENTIALLY AFFECTS PROCESSING OF EMOTIONAL AND NEUTRAL FACES
KOUPTSOVA, Jane, LEUNG, Rachel, TAYLOR, Margot

P2-010
COMPLEX CONSCIOUSNESS THROUGH MUSICIANS' EARS
CARPENTIER, Sarah, FUJIOKA, Takako, BERNHARD, Ross, MCINTOSH, Randy

P2-011
THETA OSCILLATIONS DURING COGNITIVE CONTROL: A COMBINED M/EEG STUDY
HINKLEY, Leighton, COHEN, Mike, GULBINAITE, Rasa, MIZUIRI, Danielle, HONMA, Susanne, NAGARAJAN, Srikantan

P2-012
CORTICAL OSCILLATIONS IN INHIBITORY CONTROL: EVIDENCE FOR A DIFFERENTIAL ROLE OF GAMMA AND THETA BAND ACTIVITY IN PERFORMANCE MONITORING
ISABELLA, Silvia, CHEYNE, Douglas

Attention, Consciousness & Executive Function

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P2-013
AMPLITUDE DIFFERENCES PRESENT AT ANTERIOR PREFRONTAL CORTEX DURING RESPONSES TO A VISUOMOTOR TASK IN ADOLESCENTS WITH FETAL ALCOHOL SPECTRUM DISORDER (FASD): A MEG STUDY.
GARCIA, Christopher, KODITUWAKKU, Piyadasa, TESCHE, Claudia

P2-014
NEURAL ENTRAINMENT TO THE BEAT: THE "MISSING PULSE" PHENOMENON
ZION GOLUMBIC, Elana, VALESCO, Marc, SCHROEDER, Charles, POEPPEL, David, LARGE, Edward, TAL, Idan

P2-015
OSCILLATORY DYNAMICS OF RESPONSE INHIBITION: IT IS HARD TO HOLD YOUR HORSES WHEN DRUNK
MARINKOVIC, Ksenija, KOVACEVIC, Sanja, ROSEN, Burke

P2-016
THE SPATIO-TEMPORAL ARCHITECTURE OF THEORY OF MIND PROCESSING IN A FALSE BELIEF TASK
AUCOIN-POWER, Michelle, SMITH, Mary Lou, PANG, Elizabeth W., LALANCETTE, Marc, MOSSAD, Sarah, URBAIN, Charline M., TAYLOR, Margot J.

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P2-018
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FREY, Julia Natascha, RUHNAU, Philipp, WEISZ, Nathan

P2-019
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P2-020
MODULATIONS OF POWER AND CONNECTIVITY PATTERNS IN THE BETA BAND PREDICT CONSCIOUS PERCEPTION OF UPCOMING NEAR-THRESHOLD VISUAL STIMULI
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IMPROVED FINE-CALIBRATION OF TRIPLE-SENSOR MEG ARRAYS
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P2-023
LOW-COST, HIGH PERFORMANCE INSTRUMENTATION FOR BIOMAGNETISM
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P2-024
CALIBRATING THE NEW MEG SYSTEM IN NAPLES
VIVALDI, Valentina, SORRENTINO, Alberto, SOMMARIVA, Sara, PIANA, Michele, ROMBETTO, Sara, RUSSO, Maurizio

P2-025
ATOMIC MAGNETOMETERS FOR MAGNETOENCEPHALOGRAPHY: DESIGN, CONSTRUCTION, AND VALIDATION OF A 36-CHANNEL SYSTEM
COLOMBO, Anthony, SCHWINDT, Peter, JAU, Yuan-Yu, YOUNG, Amber, MCKAY, Jim, WEISEND, Michael

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TOWARDS MULTICHANNEL HIGH-TC MEG SYSTEMS
FALEY, M. I., CHOCHOLACS, H., DAMMERS, J., EICH, E., BOERS, F., SHAH, N. J., GERASIMOV, I. A., SOBOLEV, A. S., SLOBODCHIKOV, V. Yu., MASLENNIKOV, Y. V., KOSHELETS, V. P., DUNIN-BORKOWSKI, R. E.

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LUESSI, Martin, NUMMENMAA, Aapo, LEW, Seok, OKADA, Yoshio, HÄMÄLÄINEN, Matti

P2-028
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KÖRBER, Rainer, FEDELE, Tommaso, SCHEER, Hans-Jürgen, CURIO, Gabriel, BURGHOFF, Martin

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LEE, Seong-Joo, KIM, Kiwoong, SHIM, Jeong Hyun, YU, Kwon Kyu, HWANG, Seong-min

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ADVANCED HELIUM LIQUEFACTION AND RECYCLING FOR MEG SYSTEMS
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NOWAK, Hannes, LEMBKE, Gertrud, WITTE, Otto W., MENHORN, Benjamin, PASQUARELLI, Alberto, ERNE, Sergio N.

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P2-033
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CORDOVA-FRAGA, Teodoro, GOMEZ-AGUILAR, José Francisco, VAZQUEZ-OLVERA, Sergio, CASTRO-LOPEZ, Jorge, HERNANDEZ-GONZALEZ, Martha Alicia, SOLORIO-MEZA, Sergio, GUZMAN-CABRERA, Rafael, BERNAL-ALVARADO, José de Jesús, VARGAS-LUNA, Francisco Miguel

P2-034
HELIUM-FREE MEG RECORDINGS: SOURCE LOCALIZATION OF BRAIN ACTIVITY
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P2-035
COMPUTING RESOLUTION FOR NEUROMAGNETIC IMAGING SYSTEMS
SEKIHARA, Kensuke, HIYAMA, Ei

JAMES ZIMMERMAN PRIZE WINNER

P2-036 **HOT TOPIC**
MIXED SENSORS: SPIN ELECTRONICS-BASED MAGNETOMETERS FOR BIOMAGNETISM
PANNETIER-LECOEUR, Myriam

P2-037
LOW COST 3D MOTION TRACKING IN MEG
TARRIN, Nicolas, POESCHL, Christiane, COKGUNGOR, Serpil, ROHU, Victor, LABYT, Etienne

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MAGNETIC RESONANCE IMAGING OF MOUSE HEAD IN ULTRA-LOW MAGNETIC FIELD
OYAMA, Daisuke, TSUYUGUCHI, Naohiro, ABE, Junya, MIYAMOTO, Masakazu, ADACHI, Yoshiaki, HIGUCHI, Masanori, KAWAI, Jun, UEHARA, Gen

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P2-041
MEASURING DC IN THE HEAD IN A NEW WAY: USING THE PLANAR GRADIOMETERS IN A STANDARD ELEKTA MEG HELMET
KHAN, Sheraz, COHEN, David

P2-042
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IMPROVEMENT OF SQUID MAGNETOSPINOGRAPHY SYSTEM TOWARD THE PRACTICAL USE IN HOSPITALS
ADACHI, Yoshiaki, HARUTA, Yasuhiro, UEHARA, Gen, KAWABATA, Shigenori, SEKIHARA, Kensuke

P2-050
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XIE, Minshu, SCHNEIDERMAN, Justin F., CHUKHARKIN, Maxim L., KALABOUKHOV, Alexei, LUNDQVIST, Daniel, WHITMARSH, Stephen, HÄMÄLÄINEN, Matti, JOUSMÄKI, Veikko, OOSTENVELD, Robert, WINKLER, Dag

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ASSESSING THE ADDED VALUE OF RECORDING MEG CLOSER TO THE CORTEX
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P2-052
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Neurological Disorders

P2-053
QUANTITATIVE COMPARISON OF INTERICTAL AND ICTAL NEUROMAGNETIC ABNORMALITY IN CHILDREN ABSENCE EPILEPSY WITH MEG ACCUMULATED SOURCE IMAGING
TANG, Lu, XIANG, Jing

P2-054
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P2-056
IMPAIRED GAMMA-BAND RESPONSES TO AUDITORY WORD STIMULI IN AUTISM SPECTRUM DISORDERS
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P2-057
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SONG, Xiaowei, CLARKE, Maggie, LABLANC, Emily, BARDOUILLE, Timothy, FISK, John, DARVESH, Sultan, BEYEA, Steven, D'ARCY, Ryan, ROCKWOOD, Kenneth

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STALJANSSENS, Willeke, STROBBE, Gregor, DE TAEYE, Leen, VAN ROOST, Dirk, VONCK, Kristl, RAEDT, Robrecht, VAN HOLEN, Roel, VANDENBERGHE, Stefaan, VAN MIERLO, Pieter

P2-060
INVESTIGATION OF MOTOR-RELATED BRAIN ACTIVITIES IN PATIENT WITH WHITE MATTER DISEASE: A MEG STUDY
KIM, Bong Soo, HWANG, Su-Jeong, CHANG, Won Seok, KIM, Kiwoong, KWON, Hyuk Chan, LEE, Yong Ho, CHANG, Jin Woo

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MONITORING MOTOR-CORTEX PLASTICITY DURING STROKE RECOVERY USING PASSIVE MOVEMENTS
PARKKONEN, Eeva, LAAKSONEN, Kristina, PARKKONEN, Lauri, PIITULAINEN, Harri, FORSS, Nina

P2-062
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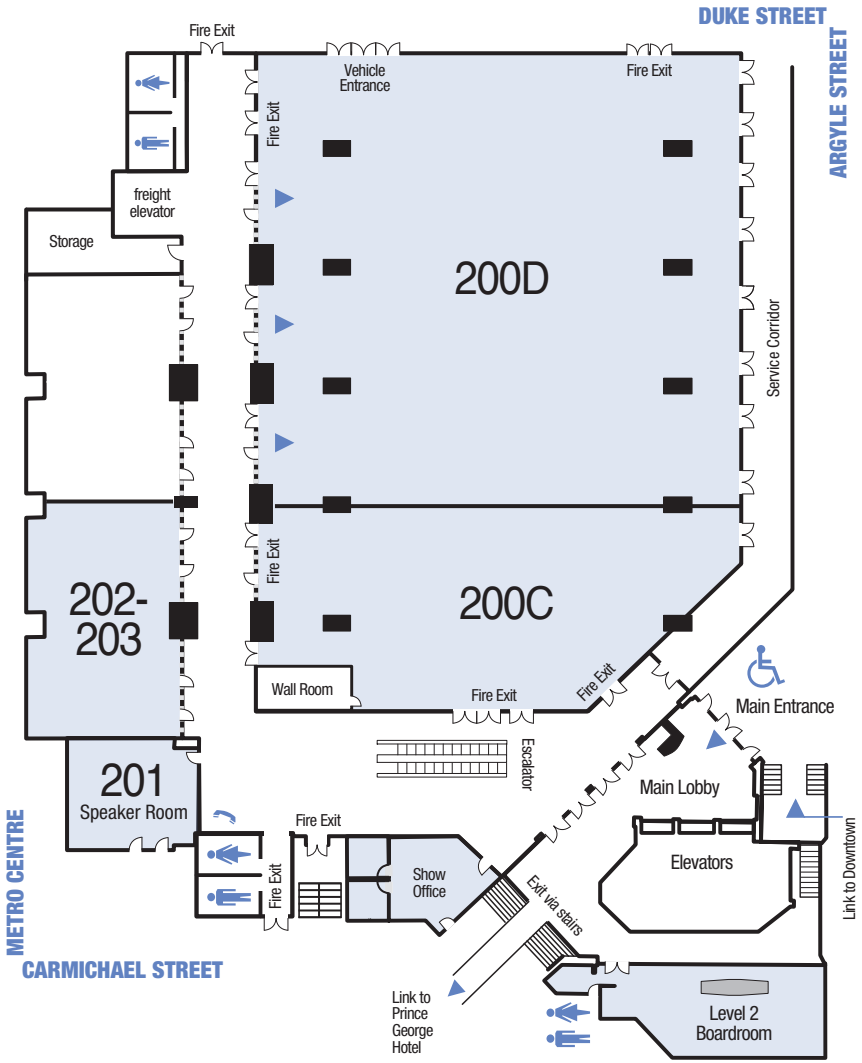

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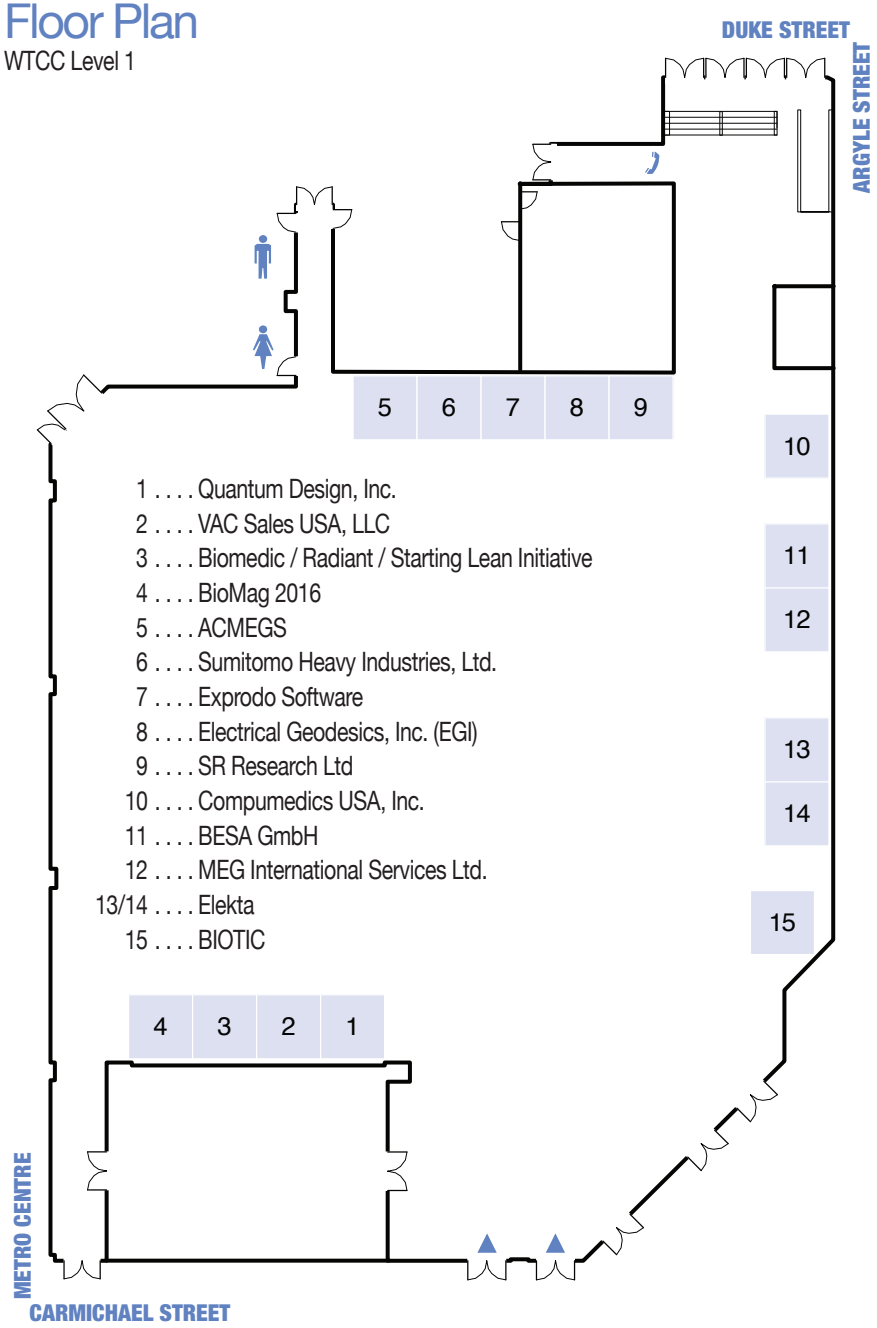

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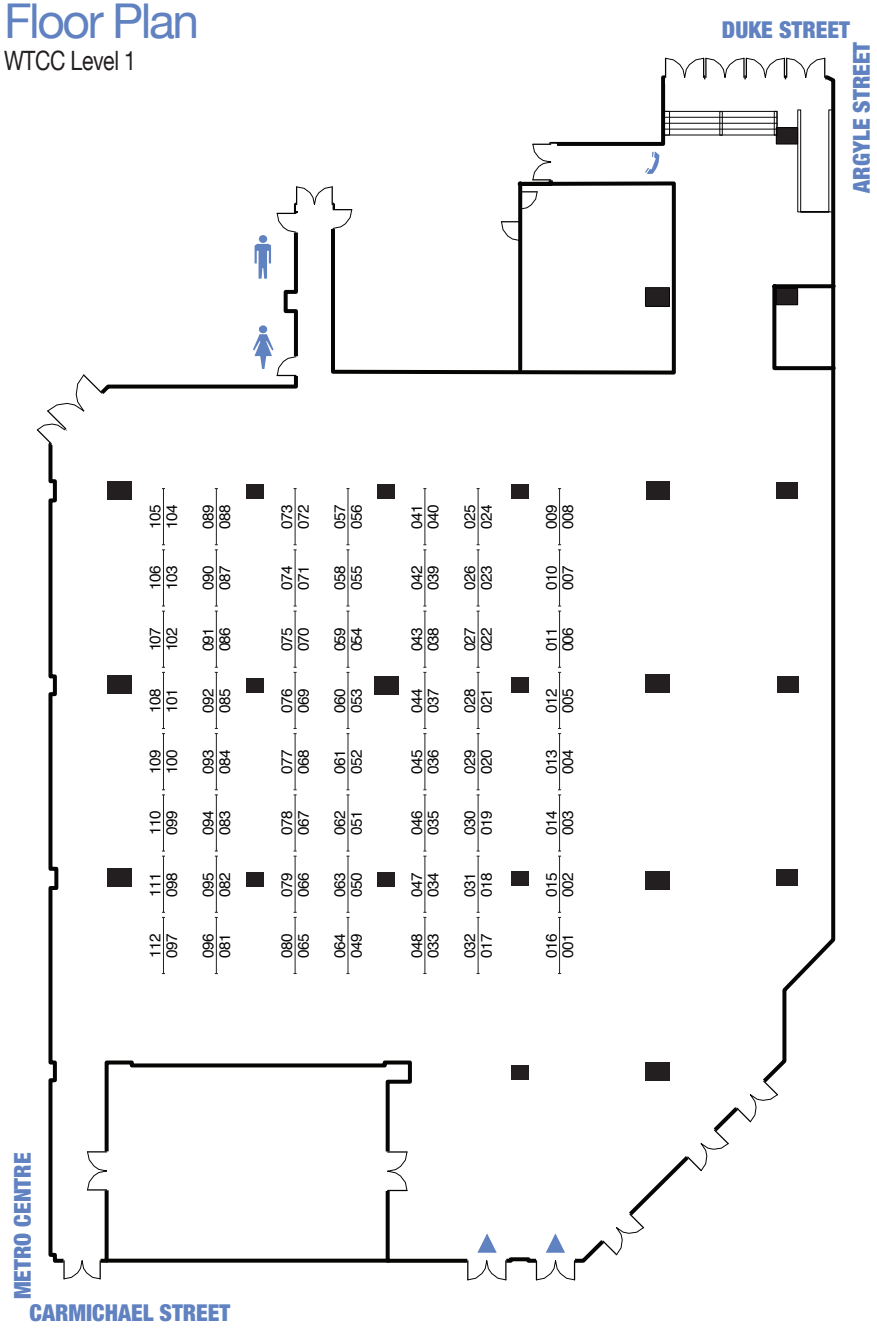

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2. Art Gallery Of Nova Scotia
3. Information Centre
4. Bishop's Landing
5. Casino Nova Scotia
6. Cathedral Church of All Saints
7. City Hall
8. Cornwallis Street Baptist Church
9. Discovery Centre
10. Ferry Terminal
11. Government House
12. Halifax Explosion Carillon
13. Little Dutch Church
14. Maritime Museum of the Atlantic
15. Museum of Natural History
16. Neptune Theatre
17. NS Centre for Craft and Design
18. NS Sport Hall of Fame
19. Old Town Clock
20. Our Lady of Sorrows Church
21. Pier 21 National Historic Site
22. Historic Properties
23. Province House
24. St. David's Church
25. St. Mary's Basilica
26. St. Matthew's Church
28. Train Station
29. St. Paul's Anglican Church
30. Cunard Centre

Accommodations

1. Cambridge Suites
2. Marriott
3. Lord Nelson
4. Dalhousie
5. Delta Halifax
6. Delta Barrington
7. Four Points
8. Future Inns
9. Holiday Inn
10. Atlantica
11. Haliburton
12. Courtyard
13. Citadel
14. MSVU
15. Prince George
16. Quality Inns
17. Radisson
18. Residence Inn
19. SMU
20. Westin

P Parking

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